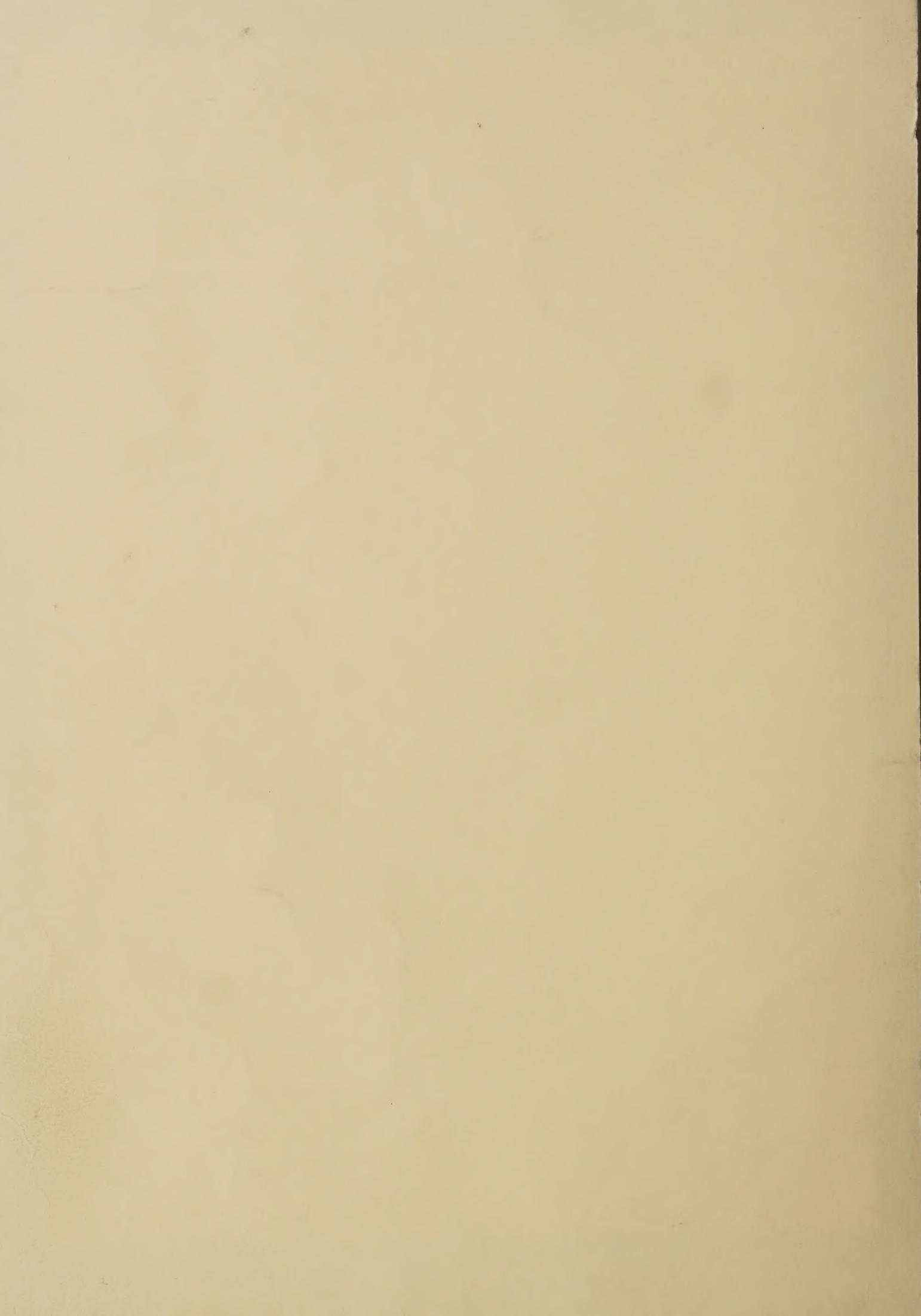


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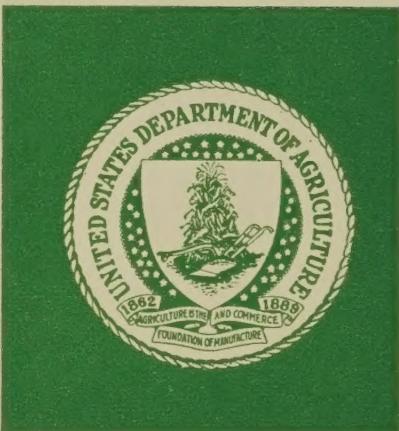


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UNITED STATES DEPARTMENT OF AGRICULTURE  
ECONOMIC RESEARCH SERVICE  
WASHINGTON, D.C. 20250

June 9, 1972

Subject: Dairy Herd Management Recordkeeping in El Salvador, by  
Dr. Frank D. Sargent

To: Quentin West/Lyle Schertz/Wm. A. Faught, ERS  
A. J. Nichols/James Sayre, ERS  
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C. K. Laurent/G. Chavez, USAID/El Salvador  
Donald Fiester/Jack Halpin, LA/DR, AID  
Howard Sharlach, LA/CEN, AID  
Memory Bank, AID

Attached is a copy of subject report by Dr. Frank D. Sargent, Extension Dairy Specialist with North Carolina State University and USDA, cooperating, following his 2-week TDY in El Salvador April 23 to May 5, 1972. The purpose of this assignment was to assist the Livestock Bureau of the Salvador Ministry of Agriculture in establishing a system of evaluating herd sires.

Dr. Ernest Corley of ARS/USDA has made two consultant trips to El Salvador since 1965, and Dr. Sargent made one trip in 1967 to assist the Ministry in establishing a dairy recordkeeping program. This assignment is an additional phase and a followup to previous assistance.

Note general comments and scope of assignment on the first page and recommendations on page 5.

*Marshal D. Fox*

MARSHAL D. FOX  
Central America Development Officer

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PROGRESS REPORT

DAIRY HERD MANAGEMENT RECORDKEEPING IN EL SALVADOR\*

Based on Trip to El Salvador  
April 23 - May 5, 1972

Frank D. Sargent

General Comments

The author carried out a seven-week AID-USDA/PASA sponsored assignment to assist with implementing a dairy herd management record program in El Salvador from September 20 to November 13, 1967 (4). The record system implemented at that time was based on the forms, manual, and recommendations formulated by Dr. E. L. Corley in February of 1967 (1,2). Six herds were enrolled on the program in 1967 including approximately five hundred cows. By April of 1970, participation had expanded to about three thousand cows in twenty-four herds (3). During the present assignment, obvious improvements were observed in several of the dairy herds visited in 1967. The author was impressed by the development of the dairy record program and the apparent interest and dedication of the Livestock Bureau personnel directly involved.

Scope of Assignment

The present assignment was for the purpose of assisting the personnel of the Livestock Bureau in establishing a standard lactation record file and to implement procedures for using the standard lactation records to genetically evaluate sires. Prior to departing for El Salvador, a  $3\frac{1}{2}$  x  $7\frac{1}{2}$  inch card layout was developed with Spanish headings and spaces for recording the necessary information for a standard lactation record file. Two thousand cards were prepared for use in initiating the lactation record file after arrival in El Salvador. The information included on these lactation cards was based primarily on the recommendations of Corley and Hodgson (3).

Current Status of the Record Program

Upon arrival in El Salvador, the current status of the record program was reviewed in detail with Lisandro Pohl. Unfortunately, during the two years since the visit by Corley and Hodgson in April, 1970, it had been

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\*Appreciation is extended to Mr. Marshall Fox, Central America Development Officer, Dr. C. Kenneth Laurent, Team Leader and the AID-USDA/PASA program for assistance and cooperation in making this assignment possible. The author is grateful to Mr. C. W. Reeves for suggestions and counsel during the visit to El Salvador and wishes to express particular thanks to Mr. Lisandro Pohl of the Livestock Bureau for his enthusiastic support and cooperation.



necessary to temporarily change the responsibilities of some of the personnel who normally work with the record program to other activities. The unavoidable result was a serious setback for the record program. Enrollment in the record program had dropped from twenty-four herds to twenty herds. The reports for many of these twenty herds were from two to three months behind schedule at the time of the current visit. The Register of Animals in the Herd pages had not been kept current with the result that sire identification for most of the cows on the record program was not conveniently available. Lisandro Pohl had been forced to discontinue the summaries and analyses he had been making at the time of Corley and Hodgson's visit.

These problems were discussed in detail with appropriate people in the Livestock Bureau. The essential problem appeared to be the same as is frequently encountered in all countries and all walks of life; namely, a shortage of adequately trained personnel. This necessitated shifting record program personnel to other activities temporarily. However, tentative arrangements were discussed which would permit the dairy record reports to be brought up to date within a period of about one month and to keep them on a current basis in the future. It cannot be over-emphasized that a dairy record program is a continuous, on-going project and must be kept current at all times if the records are to be of value for herd management purposes.

#### Establishment of a Standard Record File

Corley and Hodgson recommended the establishment of a standard 305-day lactation record file (3). While there are other possible methods of assembling the information necessary to genetically evaluate sires, such a standard lactation record file would serve this purpose and at the same time make the records available in a convenient manner for other kinds of analyses. The establishment and routine maintenance of a standard lactation record file thus was a high priority item. The initial sire proofs were to be based on first lactation records, and this was taken as a starting point. Since the Register of Animals in the Herd pages were not available, it was necessary to rely on the private records maintained by the herd owners for sire identification. Whether or not the A. I. sires at the Livestock Bureau had been used in each herd was also important because obtaining proofs on the bulls in this stud was a major concern. Lisandro Pohl suggested several herds which had used the Livestock Bureau A. I. service and which he thought would have sire identification information available. From this group, four herds were selected; and all first lactation records with calving dates between May 15, 1969, and November 15, 1970, were recorded on the standard lactation cards. Two of these herds had both Brown Swiss and Holstein cows, and the other two herds had almost entirely Holstein cows. These herds were all visited during the course of the present assignment. Grateful appreciation is expressed to the owners of these herds for their courtesy and cooperation in supplying sire identification information on cows as well as general management information concerning their herds. They are as follows: Mr. Jose Roberto Castillo Paredes, Mr. Enriche Alfaro Castillo, Mr. Juana Zelaya De Zelaya, and Mr. Leo Lopey Y Lopez.



A total of about one hundred and seventy records were at least partially recorded on the cards. This involved verifying the ages at calving and in most cases calculating the exact production for the first 305 days of lactation, since the computation of standard 305-day records had not been made a part of the routine record program. Although a great majority of the total lactations were more than 305 days long, all records of less than 305 days were checked to verify the dry date.

So few records were terminated for reasons other than being turned dry that they were simply discarded for purposes of the present sire proof computations. Normally, this would not be an acceptable procedure as it tends to bias the proofs on the poor sires upward. However, in the present circumstances, there were less than a half dozen records of this type; and it was not possible to determine the cause of each cow leaving the herd. Roughly, seventy of the total of one hundred and seventy, first lactation records available could not be used for genetically evaluating sires. About half were rejected for lack of sire identification (unavailable even at the farm). Another sizeable group was rejected because the cows were more than thirty-six months of age at calving; even though it was their first lactation. Others were rejected for lack of date of birth, and because there was only one record in a herd-breed-season group. These records were retained in the standard 305-day lactation file and can be used for some other kinds of studies.

Days open were recorded for many of these lactations initially. However, it was obvious that the recorded breeding dates were not complete (very frequently they are not in the United States either); and the number of days open had to be verified or calculated from the next calving date. Tracing records out in this fashion is extremely time consuming, and the effort to record days open at this juncture was abandoned in order to obtain an adequate total number of records to tabulate at least a few sire proofs.

The total number of days and production for the complete lactation were also recorded for many of these lactations initially. This again is a very time consuming procedure if the records must be traced out after the record has been completed and was abandoned at this time. All records were traced out to the dry date, if less than 305 days in length or terminated at 305 days if longer; and this information was recorded on the standard lactation cards.

#### Genetic Evaluation of Sires

Sire summaries were computed for three Holstein sires and three Brown Swiss sires which had been used in the Livestock Bureau A. I. stud. It is extremely important that the limitations of these present sire summaries or proofs be kept firmly in mind. They should be viewed as very tentative genetic evaluations of the sires due to the small numbers of daughters, herdmates, and herds included. One Holstein sire had ten daughters in three herds (five herd-season groups), and one Brown Swiss sire had twelve daughters in three herds (four herd-season groups). The accuracy of these sire summaries as estimates of the breeding values of the sires is similar to what could be obtained from complete production information on the parents and grandparents using an indexing procedure. However, through



the use of a very small amount of additional resources to maintain the Register of Animals in the Herd pages (thus making sire identification generally available) the accuracy of future sire proofs can be greatly increased.

The methodology used in computing the sire summaries was exactly as recommended and outlined by Corley and Hodgson (3). The only deviation from their recommendation was that the daughter-herdmate comparison calculations were made only for milk production and not for days in milk. Since the computational procedures for days in milk are identical to those for pounds of milk, this can be added at any time. Such a high proportion of the present group of records were for 305 days that it did not appear the deviations for days in milk would be of any significance.

There was a considerable range in the final daughter-herdmate comparison values for the sires summarized. The highest value was +1285 for a Brown Swiss sire, but this was based on only five daughters in two herds. The lowest value was minus by several hundred pounds. Records on additional daughters and herdmates will become available during the next year and with the small numbers used at this time will significantly increase the accuracy of the evaluation of each sire. Information on sire identification could not be obtained from at least one herd (Mr. Oscar Sandoval) at the time of this assignment but may also be available in the future and could be used to increase the accuracy of these genetic evaluations.

Mr. Lisandro Pohl was directly involved in recording information for the standard 305-day lactation record file and in computing the sire summaries; in fact, Mr. Pohl computed the last sire summary entirely independently. The author simply checked the results afterward. Mr. Pohl should have no difficulty in computing further daughter-herdmate comparisons in the future or in training other personnel to carry out these procedures. In view of the very detailed illustration of the computational procedures in the report by Corley and Hodgson, repetition here does not seem warranted (3).

One difficulty concerning the genetic evaluation of the sires in the Livestock Bureau A. I. stud has greatly increased during the last couple of years. Several of the herds enrolled on the record program are currently breeding all of their cows with frozen semen from commercial A. I. studs in the United States. Discussions with several of these herd owners suggested that they were being reasonably selective in terms of the sires they were using, and this practice may be improving the inherited potential of their herds more rapidly than would be possible in any other way. However, this practice means that the records from these herds will be of no use for genetically evaluating the sires in the Livestock Bureau A. I. stud. During a general discussion of this problem, Mr. C. W. Reeves suggested that these herd owners be asked to cooperate by breeding perhaps 10 percent to 20 percent of their herds to sires in the Livestock Bureau A. I. stud. The author is entirely in accord with this suggestion. There is a natural trend for herds to depend more heavily on the use of frozen semen from the United States as feeding practices, general management, and production per cow increases.



Recommendations

1. Every possible effort should be made to prevent the temporary shifting of personnel away from the dairy recordkeeping program to other activities in the future. If records of this kind are not current, they are of minimal value to the herd owners. The inevitable result will be diminished interest and cooperation from the herd owners.
2. Arrangements should be made to provide for recording complete identification of all calves on the Register of Animals in the Herd pages to insure that this information will be conveniently available at the time these animals mature and enter the milking herd. The additional resources required (time on the part of the field supervisors primarily) to perform this function are very small in comparison to the total resources being expended for the program and will greatly increase the usefulness of the records. It is strongly recommended that copies of these Register of Animals in the Herd pages be kept on file at the Livestock Bureau.
3. Arrangements should be developed for recording information for the standard 305-day lactation record file currently as it becomes available. That is, in making the calculations for the monthly reports whenever a cow goes dry or completes more than 305 days in milk, a standard lactation card should be made up for the lactation right at that time. These cards can be recorded by hand in ink with a minimum of time and effort if the recording is done at that point in the system.
4. Although first priority must be given to providing adequate service for herds already enrolled on the program and utilizing the available information more completely for sire evaluation and other analyses, the need for expanding participation should not be forgotten. In this context and as a future development, the author would recommend that serious consideration be given to changing to a machine processed record program with the records being processed in the United States. Based on observations and discussions during the present assignment, it seems very doubtful if the resources can ever be made available to expand participation on anything like the scope recommended by Corley and Hodgson as long as the calculations must be made by hand (4). One herd owner with whom this possibility was discussed indicated he would be willing to pay the full cost of machine processing himself. Two to three weeks was indicated to be the normal interval from date of test until the herd owner received his report with the present hand system. Even allowing for the extra mailing time involved in having records processed in the United States, it would be possible to stay within this time limit. This approach would certainly increase the accuracy of the records and should permit the same Livestock Bureau personnel to handle a considerably larger number of herds.



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